

## PATENT ABSTRACTS OF JAPAN

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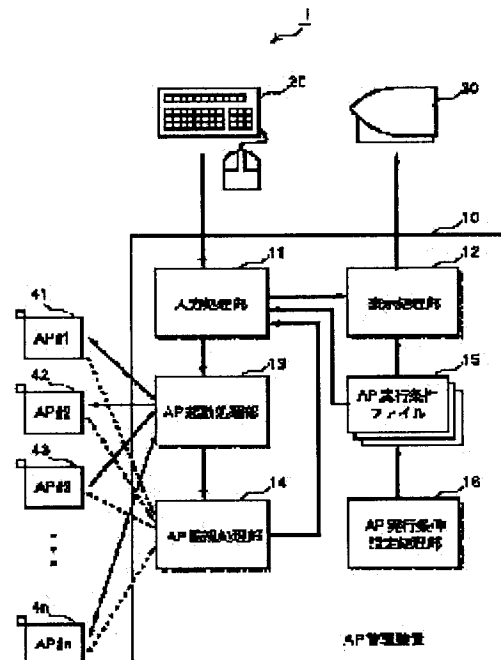
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**(54) PROGRAM EXECUTION MANAGEMENT METHOD, DEVICE THEREFOR AND RECORDING MEDIUM**

(57)Abstract:

**PROBLEM TO BE SOLVED:** To provide an application program (AP) management system capable of limiting the simultaneous execution of plural execution type programs, e.g. APs.

**SOLUTION:** Program execution management is executed by using an AP execution condition file 15 setting up the limit condition of simultaneous execution of other programs in each program. When a non-display request e.g. is set up in the file 15, a display processing part 12 does not display a menu in AP execution, and when a mask request e.g. is set up, the menu is masked so as not to be selected. After the end of AP execution, the limit condition is reset.



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**CLAIMS**

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[Claim(s)]

[Claim 1]An air cleaner which is provided with the following, prepares an opening and closing valve for opening and closing this inflow part for the above-mentioned inflow part, and is characterized by energizing the above-mentioned opening and closing valve in the closed direction by the 1st energizing means, and energizing it in the closed direction by lift generated with a fluid stored in the above-mentioned storage tank.

By spraying fluids, such as water, and contacting air inhaled from the outside into this sprayed fluid, A discharge section to be the air cleaner from which a bad smell, dust, etc. which were contained in the above-mentioned air were removed, have a storage tank for supplying the above-mentioned fluid, and for the above-mentioned storage tank flow out a fluid in the above-mentioned storage tank.

An inflow part for flowing air in the above-mentioned storage tank.

[Claim 2]The air cleaner according to claim 1 having a tubed solid of revolution, supplying the above-mentioned fluid from an inside of the above-mentioned solid of revolution, or the upper part, and dispersing as detailed waterdrop according to a centrifugal force by rotation of the above-mentioned solid of revolution.

[Claim 3]Claim 1 having a floating body which generates lift with a fluid stored in the above-mentioned storage tank, or the air cleaner according to claim 2.

[Claim 4]The air cleaner according to claim 3 having the 2nd energizing means compressed when lift occurs in the above-mentioned floating body with a fluid stored in the above-mentioned storage tank, after the above-mentioned opening and closing valve was energized by open direction and the 1st energizing means of the above had contracted.

[Claim 5]An air cleaner from which a bad smell, dust, etc. which were contained in the above-mentioned air by spraying fluids characterized by comprising the following, such as water, and contacting air inhaled from the outside into this sprayed fluid were removed.

A discharge section to have a storage tank for supplying the above-mentioned fluid, and for the above-mentioned storage tank flow out a fluid in the above-mentioned storage tank.

The 1st energizing means that has an inflow part for flowing air in the above-mentioned storage tank, prepares an opening and closing valve for opening and closing this inflow part for the above-mentioned inflow part, and energizes the above-mentioned opening and closing valve in the normally closed direction, The 2nd energizing means compressed by lift of a fluid which an end was fixed to the above-mentioned opening and closing valve, was set up more strongly than energizing force of the 1st energizing means of the above, and was stored in a storage tank.

[Claim 6]The air cleaner according to claim 5 having a tubed solid of revolution, supplying the above-mentioned fluid from an inside of the above-mentioned solid of revolution, or the upper part, and dispersing as detailed waterdrop according to a centrifugal force by rotation of the above-mentioned solid of revolution.

[Claim 7]Claim 5 which the 1st energizing means of the above is compressed by providing a suppressed area in the other end of the 2nd energizing means of the above, and carrying out the depression of the above-mentioned suppressed area, and is characterized by opening the above-mentioned opening and closing valve, or the air cleaner according to claim 6.

[Claim 8]The air cleaner comprising according to claim 7:

A stowage which stores the above-mentioned storage tank.

A pressing part which presses the above-mentioned suppressed area to the above-mentioned stowage.

[Claim 9]The air cleaner according to claim 8, wherein the above-mentioned stowage has a covering device and the above-mentioned pressing part is provided in the above-mentioned covering device.

[Claim 10]A negative ion generator which is provided with the following, prepares an opening and closing valve for opening and closing this inflow part for the above-mentioned inflow part, and is characterized by energizing the above-mentioned opening and closing valve in the closed direction by the 1st energizing means, and energizing it in the closed direction by lift generated with a fluid stored in the above-mentioned storage tank.

A discharge section to be a negative ion generator made to generate an anion by spraying fluids, such as water, as detailed waterdrop, have a storage tank for supplying the above-mentioned fluid, and for the above-mentioned storage tank flow out a fluid in the above-mentioned storage tank.

An inflow part for flowing air into the above-mentioned storage tank.

[Claim 11]The negative ion generator according to claim 10 having a tubed solid of revolution, supplying the above-mentioned fluid from an inside of the above-mentioned solid of revolution, or the upper part, and dispersing as detailed waterdrop according to a centrifugal force by rotation of the above-mentioned solid of revolution.

[Claim 12]Claim 10 having a floating body which generates lift with a fluid stored in the above-mentioned storage tank, or the negative ion generator according to claim 11.

[Claim 13]When the above-mentioned opening and closing valve is energized by open direction, the 1st energizing means of the above contracts, The negative ion generator according to claim 12 having the 2nd energizing means compressed when lift occurs in the above-mentioned floating body with a fluid stored in the above-mentioned storage tank after the 1st energizing means of the above had contracted.

[Claim 14]A negative ion generator made to generate an anion by spraying fluids characterized by comprising the following, such as water, as detailed waterdrop.

A discharge section to have a storage tank for supplying the above-mentioned fluid, and for the above-mentioned storage tank flow out a fluid in the above-mentioned storage tank.

The 1st energizing means that has an inflow part for flowing air in the above-mentioned storage tank, prepares an opening and closing valve for opening and closing this inflow part for the above-mentioned inflow part, and energizes the above-mentioned opening and closing valve in the normally closed direction, The 2nd energizing means it is fixed to the above-mentioned opening and closing valve, and an end is strongly set up rather than energizing force of the 1st energizing means of the above, and is compressed by lift of a fluid stored in the above-mentioned storage tank.

[Claim 15]The negative ion generator according to claim 14 having a tubed solid of revolution, supplying the above-mentioned fluid from an inside of the above-mentioned solid of revolution, or the upper part, and dispersing as detailed waterdrop according to a centrifugal force by rotation of the above-mentioned solid of revolution.

[Claim 16]Claim 14 which the 1st energizing means of the above is compressed by providing a suppressed area in the other end of the 2nd energizing means of the above, and carrying out the depression of the above-mentioned suppressed area, and is characterized by opening the above-mentioned opening and closing valve, or the negative ion generator according to claim 15.

[Claim 17]The negative ion generator comprising according to claim 16:

A stowage which stores the above-mentioned storage tank.

A pressing part which presses the above-mentioned suppressed area to the above-mentioned stowage.

[Claim 18]The negative ion generator according to claim 17, wherein the above-mentioned stowage has a covering device and the above-mentioned pressing part is provided in this covering device.

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[Translation done.]

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**DETAILED DESCRIPTION**

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[Detailed Description of the Invention]

[0001]

[Field of the Invention]This invention relates to an air cleaner and a negative ion generator. By providing in detail the solid of revolution which sprays detailed waterdrop, making the air inhaled from the outside stick to this detailed waterdrop, and catching it, Make it generate an anion by removing the dust etc. which were contained in the air, and defecating air, or dispersing detailed waterdrop, and. When providing the opening and closing valve which opens and closes the channel of air in some storage tanks, using a storage tank also as a recovery tank and this tank becomes near the full of water, it enables it to prevent the inflow to the storage tank of recovering liquid automatically by closing an opening and closing valve automatically.

[0002]

[Description of the Prior Art]From the former, in order to use fluids, such as water and petroleum, a humidifier, a cold blast machine, an air cleaner, an oilstove, etc. are known as a device provided with the tank for feed water (supply). The air cleaner is equipped also with the recovery tank for collecting the used water. The recovery tank is constituted enabling free attachment and detachment so that waste fluid can be discarded, when the inside of a tank is filled to the brim with water with waste fluid, so that the water tank used for these devices can fill up a fluid and can be exchanged.

[0003]

[Problem(s) to be Solved by the Invention]By the way, a recovery tank needs to detect that it was filled to the brim with water using a certain means with waste fluid. In the thing using the electric means of a photosensor etc., a sensor, the circuit board, etc. are needed, and also full-of-water detection becomes impossible the time of interruption to service. Since piping work etc. are needed for instead of [ which does not need a special detection means ] in using an overflow pipe, it becomes a cost hike.

[0004]Then, this invention solves a technical problem etc. which were mentioned above, and proposes \*\*\*\*\* and the negative ion generator which have a storage tank which can aim at detection of flood condition, and inflow interception only by providing the opening and closing valve opened and closed in relation to a water level.

[0005]

[Means for Solving the Problem]By spraying fluids, such as water, in an air cleaner concerning claim 1, and contacting air inhaled from the outside into this sprayed fluid, in order to solve an above-mentioned technical problem, A discharge section to be the air cleaner from which a bad smell, dust, etc. which were contained in the air were removed, have a storage tank for supplying a fluid, and for a storage tank flow out a fluid in a storage tank, Have an inflow part for flowing air in a storage tank, prepare an opening and closing valve for opening and closing this inflow part for an inflow part, and an opening and closing valve is energized in the closed direction by the 1st energizing means, and. It is energized in the closed direction by lift generated with a fluid stored in a storage tank.

[0006]It is a negative ion generator made to generate an anion by spraying fluids, such as water, as detailed waterdrop in a negative ion generator concerning claim 10, A discharge section to have a storage tank for supplying a fluid and for a storage tank flow out a fluid in a storage tank, Have an inflow part for flowing air into a storage tank, prepare an opening and closing valve for opening and closing this inflow part for an inflow part, and an opening and closing valve is energized in the closed direction by the 1st energizing means, and it is energized in the closed direction by lift generated with a fluid stored in a storage tank.

[0007]In an air cleaner and a negative ion generator, when it becomes near the full of water with a fluid in which inside of a storage tank is stored, and collecting waste fluid especially from the discharge section side, an opening and closing valve provided in an inflow part of a storage tank as a recovery tank is automatically closed by rise of a water level. Since an inflow of a fluid into a storage tank is prevented by this, by it, waste fluid does

not begin to leak from a storage tank.

[0008]

[Embodiment of the Invention] Then, one gestalt of operation of the air cleaner 6 concerning this invention is explained in detail with reference to drawings. First, the air cleaner 6 is explained with reference to drawing 1.

[0009] The air cleaner by this invention defecates the air of the exterior inhaled from the inlet port 12 using water, and exhausts it from the exhaust port 23, and the function is roughly divided into inhalation of air, pure processing (purifying treatment), and exhaust air. Among these, pure processing of air is performed by the spray part which sprays a fluid on misty state, and the water used here is supplied from the water tank (storage tank) formed in the device (supply). In order to use this water tank as an object for feed water and also to operate it as a tank for recovery which collects used water (waste water), it is constituted from this example by this air cleaner so that the recovery mode which collects waste water other than the normal mode which supplies water can be taken.

[0010] Drawing 1 shows the entire configuration figure of the air cleaner 6 concerning this invention, drawing 2 shows the left part enlarged drawing of the air cleaner 6, and drawing 3 is a right-part enlarged drawing, and shows the state where the water tank 15 was stored in the stowage 8 (set).

[0011] As shown in drawing 1, the stowage 8 for the exhaust duct 9 with an inside cylindrical on the left-hand side of the device main frame 7 to be arranged, and for the air cleaner 6 store [ the whole is made with approximately box-like, ] the water tank 15 on the right-hand side, enabling free attachment and detachment is allotted.

[0012] As shown in drawing 1, the exhaust duct 9 makes the shape of a cochlea mostly, the inside duct acts as the air intake duct 10, and an outer duct acts as the exhaust duct 9. therefore, the exhaust duct 9 -- mostly, a center serves as the abbreviated L character-like air intake duct 10, and the cylindrical spray part 11 is installed in the tubed part 27 of this air intake duct 10. The opening of the inlet port 12 of the air intake duct 10 is carried out to the end side (a figure left-hand side) of the main part 7, and the lower end opening part of the air intake duct 10 is sealed by the end plate 16 which has two or more openings. Therefore, as shown in drawing 2, the periphery side of the end plate 16 has two or more vents (opening) 17 and 17 over a circumferencial direction. These vents 17 and 17 are for passing the air defecated by the spray part 11.

[0013] It is [ the casing 19 ] united, it is formed above the Kamiita part 18 of the exhaust duct 9, and the opening of the end (a figure left-hand side) of this casing 19 is carried out outside as the exhaust port 23. The vent 26 for sending in air in the casing 19 is formed in the Kamiita part 18, and the sirocco fan 25 driven by the motor 24 so that this vent 26 may be plugged up is arranged. The air defecated when the sirocco fan 25 rotated is exhausted from the exhaust port 23 through the vent 26.

[0014] On the other hand, as the stowage 8 is shown in drawing 3, it is a case for insertion and detachment of the water tank 15, the whole is mostly constituted by the cube type (rectangular parallelepiped shape), and the rising wood of the stowage 8 is supported by the section extending 19a which extended from the inner direction flange 7a of the main part 7, and the edge part of the casing 19. The lower half part of the stowage 8 is selected so that it may be mostly in agreement with the width of the water tank 15, and the Johan part is formed somewhat broadly so that it may be easy to store the water tank 15. The tank storage port (upper opening) of the stowage 15 is opened and closed with the storage lid 21 (covering device) constituted focusing on the pivot 20 enabling free opening and closing.

[0015] The mounting cylinder part 22 of the convex pars basilaris ossis occipitalis 67 of the stowage 8 projected towards the inside (a figure on) as mostly shown also in drawing 1 in the center is formed, and the water tank 15 is set here. The mounting cylinder part 22 is a conducting port of the water tank 15, and the chamber tank 69 is inserted in the lower part. The chamber tank 69 is connected with the 1st branch pipe 40 mentioned later.

[0016] As shown in drawing 2 and drawing 3, the end plate 28 is attached to the stowage 8 bottom so that main part 7 inside may be crossed, the room by the side of the main body bottom part divided by this end plate 28 is covered, and mounting and fixing of the part 29 is carried out. The water used by pure processing of the water and the spray part 11 which collect and are supplied to the part 29 from the water tank 15 is stored. It collects, the part 29 comprises this example as a double tube-like object, and fit fixing of the lower end part of the exhaust duct 9 is carried out by the small diameter support cylinder part 30 provided inside.

[0017] As shown in drawing 3, it collects, and a part of pars basilaris ossis occipitalis of the part 29 is made with the concave part 33, and the centrifugal pump 31 for returning water used as a pumping means in the pump case 50 provided here is arranged.

[0018] Mounting and fixing of the pumping motor 48 made to rotate the centrifugal pump 31 is carried out to the upper part of the end plate 28. It pumps up with the centrifugal pump 31, and the motor 48 separates comparatively, is taken, and is that of \*\*\*\*\*, and both are connected with the axis of rotation 49 in this example. The suction hole 51 is established in the circumference of the axis of rotation for the centrifugal pumps

31, and it is open for free passage with two or more drain holes 52 formed in the peripheral flank of the centrifugal pump 31. Eccentric prevention of the centrifugal pump 31 etc. are achieved with the axis of rotation 49.

[0019]The water which collected and was stored in the part 29 is pumped up with the centrifugal pump 31, is shunted toward the 1st and 2 branch pipes 40 and 41 through the charge and discharge pipe 53 of the shape of an L character shown in drawing 3, and is sent into the spray part 11 or water tank 15 side. For this reason, the channel selector 32 is formed between the 1st branch pipe 40 and the 2nd branch pipe 41 which were mutually isolated as shown in drawing 4. Since this channel selector 32 functions as opening and closing the channel of the 1st and 2 branch pipes 40 and 41 complementarily, it can switch the watering direction of the water to which water is returned from the charge and discharge pipe 53. The upper pipes 44 and 45 of the approximately J type which constitutes the cylindrical cylinder pipes 42 and 42 are connected with the 1st and 2 branch pipes 40 and 41, and the lower pipes 46 and 47 of the cylinder pipe 42 are further connected with some charge and discharge pipes 53.

[0020]The 1st and 2nd opening and closing valve 38 and 39 provided in the channel selector 32 is opened and closed by the plunger 13. The piston 36 is fitted in the bobbin 37 which constitutes the plunger 13 toward shaft orientations, enabling a free attitude, and the 1st and 2nd opening and closing valve 38 and 39 by which India rubber etc. were used for the triangular pyramid shape tip parts 36a and 36b provided in the both sides of the piston 36 is attached. The bobbin 37 by the side of the 2nd opening and closing valve 39 is supported by the cylinder pipe 42 via an accessory plate, and the concave ring groove 68 formed in right-hand side slippage of the piston 36 is equipped with the support plate 14, and the compression spring 84 intervenes between this support plate 14 and side plate 171. As for the piston 36, the 1st opening and closing valve 38 is welded by pressure to the opening 23 of the 1st branch pipe 40 according to the elastic force of this compression spring 84 by this. As a result, the channel of the water which opens the charge and discharge pipe 53 and the chamber tank 69 for free passage is intercepted, and, as for this, the 2nd opening and closing valve 39 is opened on the contrary.

[0021]As shown in drawing 3, a water-works system is constituted so that the lower end part of the charge and discharge pipe 53 may be open for free passage with the drain hole 52 by being attached using the conduit tube 56. The crank form water pipe 57 is inserted in the upper pipe 45 of the 2nd branch pipe 41, and the other end is inserted in the mounting mouth 59 of the jet nozzle 58 provided in order to supply water to the spray part 11 shown in drawing 2. The spray part 11 shown in drawing 2 has the tubed frame part 60. The frame part 60 is the basket type composition where the superior lamella 62 and the inferior lamella 63 were allotted to the upper and lower sides of the sponge 61, and the vertical board 64 was formed at equal intervals between these superior lamellas 62 and the inferior lamella 63. The thick cylinder-like sponge 61 is held as a defecation member in the frame part 60 of the shape of this lattice. After [ of the inferior lamella 63 ] penetrating the center mostly, allotting the Johan part of the jet nozzle 58 and the flange 58a of the jet nozzle 58 having contacted the undersurface of the end plate 16, mounting and fixing is carried out to the cylindrical space formed inside the sponge 61. In the Johan part of the jet nozzle 58, two or more jet holes 75 and 75 for spouting water are punched along with the longitudinal direction of this nozzle, and the water to which water was returned from the water pipe 57 blows off almost uniformly from these jet holes 75. The motor 71 is attached to the support plate 72 of the air intake duct 10 mostly formed in the center, and the spray part 11 rotates by this motor 71. Two or more vents 73 and 73 for passing the air inhaled from the inlet port 12 are formed in the plate surface of the support plate 72.

[0022]The sprayed water adheres to the internal surface of the air intake duct 10, serves as waterdrop, and collects on the bottom plate part 120 of the exhaust duct 9. the bottom plate part 120 -- the opening 76 is mostly formed in the center and the bottom plate part 120 inclines gently toward this opening 76. The storage cylinder 77 is really formed in the lower part of the opening 76 in the state where it projected caudad temporarily [ cylindrical ], and the drain valve 78 is formed in the inside of the storage cylinder 77. For this reason, waterdrop flows through an inclined plane and is temporarily stored in the storage cylinder 77.

[0023]The drain valve 78 comprises umbrella-like the valve body 79 (valve element) and the supporting spindle 80, as shown in drawing 2, and mounting and fixing of the inside of this valve 79 is carried out to the supporting spindle 80 via the stop ring 163. Elastic materials, such as rubber, are used for the valve 79. As shown in the figure, only the specified quantity is stored here, since the drain valve 78 is always a valve closing condition, if the mist-like water used as waterdrop becomes more than a constant rate, the valve 79 will open it with the prudence, it collects [ lower ] and water comes to fall to the part 29.

[0024]Now, the water tank 15 is constituted from the attachment (screwing) \*\*\*\* feed water cap 87 and the water-works cap 70 by the tank body 86 mostly fabricated by the cube type (rectangular parallelepiped) with the rigid plastic etc., and the up-and-down mounting mouth 126,127, respectively, as shown in drawing 5. The inflow part 130 for [ of the feed water cap 87 ] making air flow in the center mostly is formed. In this example, the purge

valve 88 is formed in this inflow part 130, and the feed water at the time of feed water is promoted by this purge valve 88 (at the time of valve opening of a purge valve), and full-of-water detection which operates when collecting waste water at the time of the recovery mode mentioned later is performed. The discharge section 131 for [ of the water-works cap 70 ] pouring the water in the water tank 15 in the center mostly is formed.

[0025]the purge valve 88 has the umbrella-like valve body 89 (valve element) in which India rubber etc. were used -- the valve 89 -- the sleeve 90 -- mounting and fixing is mostly carried out to a center section, and fit fixing of the tip part of the sleeve 90 is carried out to the hollow cylinder part 111 of the float 91. By a diagram, the valve 89 is located in the concave 92 of the hollow cylinder part 111. It is equipped with the 1st compression spring 95 (the 1st energizing means) that acts in the direction which closes a valve between the flange 93 provided in the leader of the sleeve 90, and the inner direction flange 94 of the feed water cap 87.

[0026]On the other hand, between the support plate part 96 of the sleeve 90 mostly provided in the center section, and the flange 101 (suppressed area) of the pressing shaft 98 inserted in this support plate part 96, the 2nd compression spring 99 (the 2nd energizing means) intervenes. The 2nd compression spring 99 is strongly selected from the energizing force of the 1st compression spring 95.

[0027]On the other hand, the water-works valve 100 is formed in the inside of the water-works cap 70. therefore, the disc-like end plate 103 formed in inner opening part slippage of the water-works cap 70 -- the insertion hole 104 is mostly formed in the center, and the pressing shaft 102 is inserted in here, enabling a free attitude. It is equipped with the compression spring 108 between the end plate 103 and the flange 107 of the pressing shaft 102, and the valve 106 of the shape of an umbrella by which India rubber etc. were used at the tip of the pressing shaft 102 is attached. The valve 106 is always energized by the valve closing direction with this compression spring 108. Two or more circulating holes 105,105 (crevice) for pouring the water in the water tank 15 are formed in the end plate 103. It is equipped with O ring 110 for leak-prevention inside the water-works cap 70. A break through of the water from the mounting cylinder part 22 (drawing 3) can be prevented now at the time of the set of the water tank 15.

[0028]Then, operation of the air cleaner concerning this invention is explained. This air cleaner 6 has two kinds of operational modes, the normal mode and recovery mode, as mentioned above. First, operation of the usual air cleaner 6 is explained with reference to drawing 6 - drawing 10. Drawing 6 and drawing 7 The state where the electric power switch (not shown) of the air cleaner 6 is turned off is shown, and it is equipped with the water tank 15 in the stowage 8 (set), and the state where the storage lid 21 was shut is shown. In the water tank 15, water is poured so that water may turn into being filled to the brim with water mostly.

[0029]If the water tank 15 is set in the stowage 8 as shown in drawing 7, the pressing shaft 102 of the water-works valve 100 will be pressed by the boss 123 of the mounting cylinder part 22 mostly provided in the center section. Since the water-works valve 100 resists the elastic force of the compression spring 108 and is opened by this, as shown in drawing 6, the water of the water tank 15 flows in in the chamber tank 69 through the circulating hole 105.

[0030]Since the boss 81 (pressing part) of the storage lid 21 mostly projected towards the inside in the center section is formed as shown in drawing 7, as shown the storage lid 21 in a figure, when it is shut, the boss 81 contacts the flange 102 of the pressing shaft 98. As a result, the pressing shaft 98 is caudad pressed with closing of the storage lid 21. Since the 2nd compression spring 99 is stronger than the energizing force of the 1st compression spring 95, the 2nd compression spring 99 descends as it is, without being compressed even if the pressing shaft 98 is pressed (elastic deformation), and specified quantity compression (press) only of the 1st compression spring 95 is carried out in connection with this. Therefore, in a compressed part of this 1st compression spring 95, the position of the sleeve 90 descends. The purge valve 88 is opened by this, the inside and outside of a tank are open for free passage by it, and feed water by the water tank 15 is promoted.

[0031]Since the air cleaner 6 is a power supply OFF state here, as shown in drawing 6, the channel selector 32 is also turned off and the 1st opening and closing valve 38 is a valve closing condition. Therefore, at this time, the water to which water was supplied from the water tank 15 as shown in the figure is stagnating in the position of the 1st branch pipe 40.

[0032]Drawing 8 is an ON state of an electric power switch, as shown in drawing 9, current flows into the coil 34 of the channel selector 32, and thereby, the piston 36 is attracted at the 2nd branch pipe 41 side. As a result, the 2nd opening and closing valve 39 is closed, the 1st opening and closing valve 38 is opened, and as shown in the arrow of drawing 8 and drawing 9, the water in the chamber tank 69 is fed in the pump case 50 through the 1st branch pipe 40, charge and discharge pipe 53, and conduit tube 56. This water collects from the through-hole (not shown) of the pump case 50 through the drain hole 52 of the centrifugal pump 31 to the water absorption hole 51, and flows in in the part 29.

[0033]As shown in drawing 8, adjustment of the amount of water (water level) of the water which collects and is stored in the part 29 is performed by the float switch 85 formed in the concave part 82 of the end plate 83 which

collects and seals the upper surface of the part 29. If it collects and the water of the specified quantity is stored in the part 29, this will be detected by the float switch 85 and the energization to the channel selector 32 will be severed based on this detecting output. Since the channel selector 32 is turned off by this, as shown in drawing 10, the 1st opening and closing valve 38 is again closed by it, and the feed water from the water tank 15 is suspended. Since the 2nd opening and closing valve 39 will be opened if the 1st opening and closing valve 38 is closed as mentioned above, the charge and discharge pipe 53 and the water pipe 57 are opened for free passage via the 2nd branch pipe 41.

[0034]As the water level detection of the float switch 85 is interlocked with, pump up, the motor 48 energizes, the centrifugal pump 31 rotates and it is shown in the arrow of drawing 10, water is conducted to the jet nozzle 58 through the conduit tube 56, the charge and discharge pipe 53, the 2nd branch pipe 41, and the water pipe 57. The water which conducted water blows off from the jet hole 75 of the jet nozzle 58.

[0035]As mentioned above, the sponge 61 which is a porous body is stored by the spray part 11. For this reason, the water which blew off from two or more jet holes 75 is subdivided by many detailed granules by passing this sponge 61. The mist-like water furthermore subdivided with the centrifugal force by rotation of the spray part 11 is sprinkled in the duct 10, and the inside (circumference of the spray part 11) of the cylinder part 27 of the air intake duct 10 is filled with misty state water. From the inlet port 12, this mist-like water is adsorbed and the dust contained in the inhaled air, a stinking thing ingredient, etc. are caught. As a result, the air which the polluted air was defecated and was defecated from the exhaust port 23 of the exhaust duct 9 is exhausted.

[0036]The flow of such air is compulsorily built with the sirocco fan 25 provided in the casing 19 shown in drawing 10. Since there is work which inhales external air and there is also work which makes the circulation route of compulsory air to the inside and outside of air-cleaner 6 generate, the sirocco fan 25 can promote indoor air cleaning, and can defecate wide range indoor air.

[0037]The mist-like water adhering to the wall part of the air intake duct 10 serves as waterdrop, and is dropped out of the air intake duct 10. The waterdrop dropped as shown in drawing 11 A flows through the bottom plate part 120 of the exhaust duct 9, flows into the storage cylinder 77 and is stored. If the water more than the specified quantity collects in the storage cylinder 77, the 79th page of the valve of the drain valve 78 will be pressed by the weight of this water. As a result, as shown in drawing 11 B, excessive water collects through few crevices produced by the elastic deformation of the 79th page of this valve, and flows in in the part 29. The water which collected and was collected in the part 29 is again sent to the spray part 11, and is reused. Although the water used by the spray part 11 is reused to some extent, since dirt becomes severe, it is necessary to discard periodically the water which carried out long term use.

[0038]In this example, the water tank 15 functions as having mentioned above also as a recovery tank for waste fluid recovery. This recovery mode is explained with reference to drawing 12 and drawing 13.

[0039]Recovery mode is performed by using a collection switch (not shown), and if it turns on a collection switch, the channel selector 32 and the pumping motor 48 will energize it. As shown in drawing 12, the 1st opening and closing valve 38 is opened by this, and the centrifugal pump 31 rotates. For this reason, it collects, and the waste water in the part 29 flows through the charge and discharge pipe 53 from the conduit tube 56, as rotation of the centrifugal pump 31 shows to the arrow of the figure, and it conducts water in the water tank 15 through the chamber tank 69 via the 1st branch pipe 40. Since the purge valve 88 is open at this time, recovery of water becomes smooth. If water is conducted until it touches the float 91 in the water tank 15 as shown in drawing 13, the float 91 will go up with the lift by waste water. The 2nd compression spring 99 is pressed up by the lift of the float 91. Since the valve 89 will also be pushed up in connection with this, the purge valve 88 is closed soon and, as a result, the channel of the inflow part 130 is closed. If collecting operation progresses to the state where the water tank 15 will be in flood condition, and the channel of the inflow part 130 is closed on the other hand, since it collects, the waste fluid in the part 29 decreases and it will be in a water shortage state, the float switch 85 operates in connection with this, and the energization to the channel selector 32 and the pumping motor 48 is stopped. If it does so, pumping operation will be completed, and the 1st opening and closing valve 38 will be in a valve closing condition. In this case, since the purge valve 88 is closed as mentioned above, even if it is going to collect water to the water tank 15 further and the centrifugal pump 31 rotates, it becomes impossible to carry out the discharged water of the centrifugal pump 31, and water is not pumped up in the water tank 15. On the other hand, the water-works valve 100 will have been opened and all the collecting operation will end some recycled water in the state where it stagnated in the chamber tank 69.

[0040]Collecting operation may be completed before the purge valve 88 carries out detection operation. Since the float switch 85 (refer to drawing 12) will operate if it collects and the waste fluid in the part 29 is collected mostly when such, it pumps up based on the detecting output of this float switch 85, the drive of the motor 48 is suspended, and recovery mode can be terminated. The recovery time (it is a little longer than full-of-water recovery time) of waste water is set up beforehand, by using a timer etc., it may pump up after specified time



elapse, the motor 48 may be stopped, and recovery mode may be terminated.

[0041]As shown in drawing 12, the draining pipe 115 which collects on the left end lower part side of the stowage 8, and reaches the part 29 is formed. Waterdrop adhering to the inside of the stowage 8 collects through this draining pipe 115, and is collected in the part 29. In draining all the water that the drain hole 158 was formed in the lower end part of the conduit tube 56, and the position which counters, collected at the pars basilaris ossis occipitalis of the air cleaner 6, and remained in the part 29, it carries out by removing the drain valves 159.

[0042]In drawing 13, when the water tank 15 is taken out from the stowage 8, since the press by the boss 123 is canceled, the water-works valve 100 is closed. Since the inside of the water tank 15 is flood condition mostly with waste fluid, the purge valve 88 holds a valve closing condition with the lift of the float 91. For this reason, even if the water tank 15 is leaned extremely, for example or it makes it fall, the waste water in the tank 15 does not leak out.

[0043]The air cleaner 6 of this invention is equipped also with the function for not making reservoir water leak in a device at the time of a fall, etc. For example, as shown in drawing 14, when the air cleaner 6 falls, it is pressed with the water which the undersurface of the drain valve 78 collects and is stored in the part 29. Since the drain valve 78 is thoroughly closed by the water pressure of this water, water is prevented from leaking out through the storage cylinder 77 inside the device 6 (back run) by this. Since the purge valve 88 (refer to drawing 13) will also be closed with the water in the water tank 15 at this time, the water in the water tank 15 does not leak out.

[0044]Thus, when the inside of the water tank 15 becomes near the full of water with waste fluid in the case of this invention, the purge valve 88 is closed automatically. Recovery of the waste fluid into the water tank 15 is suspended by this. Since the purge valve 88 is closed with waste fluid, the circuit board for valve-closing control, etc. become unnecessary. And in this way, since the water tank 15 is provided with the function as a tank for waste fluid recovery, it can be made to serve a double purpose as a recovery tank, and the cost cut by reduction of part mark can be aimed at.

[0045]Although applied to the air cleaner in this example, this invention is applied to a humidifier, a cold blast machine, an oilstove, etc., and is very preferred.

[0046]Drawing 15 shows the negative ion generator 70 concerning this invention. The negative ion generator 70 of this example is the same as that of the air cleaner which the structure itself mentioned above paying attention to the mist-like water (detailed waterdrop) generated by the centrifugal force of the spray part 11 which is a solid of revolution.

[0047]Operation of this negative ion generator 70 is explained with reference to drawing 10 and drawing 15 which were mentioned above. The water which is the negative ion generator 70 and which was supplied from the water tank 15 (refer to drawing 10) when the electric power switch (the same thing as an air cleaner) put in collects, from the part 29, flows through the conduit tube 56 and the charge and discharge pipe 53, and conducts water from the water pipe 57 to the jet nozzle 58 via the 2nd branch pipe 41. In order that the water which conducted water may blow off from two or more jet holes 75 and 75 of the jet nozzle 58 and may pass the inside of the sponge 61 which carries out a high velocity revolution, it disperses as mist-like water to the circumference in the internal cylinder part 27 of the air intake duct 10.

[0048]As everyone knows, many anions are contained in misty water purification which disperses to the circumferences, such as the basin of a waterfall, by what is called a "Lenard effect." Therefore, a lot of anions will be contained in the clean air which is indoors exhausted by a "Lenard effect" also in the case of the negative ion generator 70 of this invention, and many effects over a human body, such as a calming effect and promotion of recovery from fatigue, can be expected by this anion. in addition, as an effect by an anion, a cardiopulmonary function is improved, blood pressure and breathing can be prepared, the blood sugar level can be reduced, or there are the recovery effect over a burn, etc., and the negative ion generator of this invention can realize healthy and comfortable indoor environment. A growth promotion operation of a living thing (vegetation) etc. can also improve.

[0049]Although the anion can make it generate by discharge of high tension (V or more [ About 3000 ]), since toxic substances, such as ozone, will also be generated simultaneously in the top in this case where power consumption is large, there is a problem of environmental protection. In this example, as mentioned above, water is used, since an anion can be generated now by using this water as mist-like water by the spray part 11, electric power is not needed and also toxic substances, such as ozone, are not generated.

[0050]The anion can generate a lot of anions, so that the dispersing waterdrop is finer. Therefore, only by carrying out the high velocity revolution of the spray part 11, since more anions can be generated, a negative ion effect can be heightened comparatively easily. In this example, have a full-of-water detection function and it is used as an object for feed water, and also since the water tank 15 collects and can collect the waste water in the part 29, it can aim at a cost cut.

[0051]

[Effect of the Invention]By the air cleaner of this invention spraying fluids, such as water, as explained above, and contacting the air inhaled from the outside into this sprayed fluid, A discharge section to be the air cleaner from which a bad smell, dust, etc. which were contained in the air were removed, have a storage tank for supplying a fluid, and for a storage tank flow out the fluid in a storage tank, It has an inflow part for flowing air in a storage tank, and the opening and closing valve for opening and closing this inflow part is prepared for an inflow part, and an opening and closing valve is energized in the closed direction by the 1st energizing means, and it is energized in the closed direction by the lift generated with the fluid stored in a storage tank.

[0052]It is a negative ion generator made to generate an anion by spraying fluids, such as water, as detailed waterdrop in a negative ion generator, A discharge section to have a storage tank for supplying a fluid and for a storage tank flow out the fluid in a storage tank, It has an inflow part for flowing air into a storage tank, and the opening and closing valve for opening and closing this inflow part is prepared for an inflow part, and an opening and closing valve is energized in the closed direction by the 1st energizing means, and it is energized in the closed direction by the lift generated with the fluid stored in the storage tank.

[0053]Therefore, according to the air cleaner and negative ion generator of this invention, when the inside of a water tank becomes near the full of water with waste fluid, a purge valve is closed automatically. Recovery of the waste fluid into a water tank is prevented by this, and it is detectable by it that the inside of a water tank was filled to the brim with water. Since the purge valve is constituted so that the valve may be closed with fluids, such as water, the circuit board etc. become unnecessary. And in this way, since the water tank is provided with the function as a tank for waste fluid recovery, it does not need a recovery tank. For this reason, the cost cut by reduction of part mark can be aimed at.

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TECHNICAL FIELD

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[Field of the Invention]This invention relates to an air cleaner and a negative ion generator. By providing in detail the solid of revolution which sprays detailed waterdrop, making the air inhaled from the outside stick to this detailed waterdrop, and catching it, Make it generate an anion by removing the dust etc. which were contained in the air, and defecating air, or dispersing detailed waterdrop, and. When providing the opening and closing valve which opens and closes the channel of air in some storage tanks, using a storage tank also as a recovery tank and this tank becomes near the full of water, it enables it to prevent the inflow to the storage tank of recovering liquid automatically by closing an opening and closing valve automatically.

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**PRIOR ART**

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[Description of the Prior Art]From the former, in order to use fluids, such as water and petroleum, a humidifier, a cold blast machine, an air cleaner, an oilstove, etc. are known as a device provided with the tank for feed water (supply). The air cleaner is equipped also with the recovery tank for collecting the used water. The recovery tank is constituted enabling free attachment and detachment so that waste fluid can be discarded, when the inside of a tank is filled to the brim with water with waste fluid, so that the water tank used for these devices can fill up a fluid and can be exchanged.

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## EFFECT OF THE INVENTION

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Many anions are contained by the "Lenard effect." Therefore, a lot of anions will be contained in the clean air which is indoors exhausted by a "Lenard effect" also in the case of the negative ion generator 70 of this invention, and many effects over a human body, such as a calming effect and promotion of recovery from fatigue, can be expected by this anion. in addition, as an effect by an anion, a cardiopulmonary function is improved, blood pressure and breathing can be prepared, the blood sugar level can be reduced, or there are the recovery effect over a burn, etc., and the negative ion generator of this invention can realize healthy and comfortable indoor environment. A growth promotion operation of a living thing (vegetation) etc. can also improve.

[0049]Although the anion can make it generate by discharge of high tension (V or more [ About 3000 ]), since toxic substances, such as ozone, will also be generated simultaneously in the top in this case where power consumption is large, there is a problem of environmental protection. In this example, as mentioned above, water is used, since an anion can be generated now by using this water as mist-like water by the spray part 11, electric power is not needed and also toxic substances, such as ozone, are not generated.

[0050]The anion can generate a lot of anions, so that the dispersing waterdrop is finer. Therefore, only by carrying out the high velocity revolution of the spray part 11, since more anions can be generated, a negative ion effect can be heightened comparatively easily. In this example, have a full-of-water detection function and it is used as an object for feed water, and also since the water tank 15 collects and can collect the waste water in the part 29, it can aim at a cost cut.

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TECHNICAL PROBLEM

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[Problem(s) to be Solved by the Invention]By the way, a recovery tank needs to detect that it was filled to the brim with water using a certain means with waste fluid. In the thing using the electric means of a photosensor etc., a sensor, the circuit board, etc. are needed, and also full-of-water detection becomes impossible the time of interruption to service. Since piping work etc. are needed for instead of [ which does not need a special detection means ] in using an overflow pipe, it becomes a cost hike.

[0004]Then, this invention solves a technical problem etc. which were mentioned above, and proposes \*\*\*\*\* and the negative ion generator which have a storage tank which can aim at detection of flood condition, and inflow interception only by providing the opening and closing valve opened and closed in relation to a water level.

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**MEANS**


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[Means for Solving the Problem]By spraying fluids, such as water, in an air cleaner concerning claim 1, and contacting air inhaled from the outside into this sprayed fluid, in order to solve an above-mentioned technical problem, A discharge section to be the air cleaner from which a bad smell, dust, etc. which were contained in the air were removed, have a storage tank for supplying a fluid, and for a storage tank flow out a fluid in a storage tank, Have an inflow part for flowing air in a storage tank, prepare an opening and closing valve for opening and closing this inflow part for an inflow part, and an opening and closing valve is energized in the closed direction by the 1st energizing means, and. It is energized in the closed direction by lift generated with a fluid stored in a storage tank.

[0006]It is a negative ion generator made to generate an anion by spraying fluids, such as water, as detailed waterdrop in a negative ion generator concerning claim 10, A discharge section to have a storage tank for supplying a fluid and for a storage tank flow out a fluid in a storage tank, Have an inflow part for flowing air into a storage tank, prepare an opening and closing valve for opening and closing this inflow part for an inflow part, and an opening and closing valve is energized in the closed direction by the 1st energizing means, and it is energized in the closed direction by lift generated with a fluid stored in a storage tank.

[0007]In an air cleaner and a negative ion generator, when it becomes near the full of water with a fluid in which inside of a storage tank is stored, and collecting waste fluid especially from the discharge section side, an opening and closing valve provided in an inflow part of a storage tank as a recovery tank is automatically closed by rise of a water level. Since an inflow of a fluid into a storage tank is prevented by this, by it, waste fluid does not begin to leak from a storage tank.

[0008]

[Embodiment of the Invention]Then, one gestalt of operation of the air cleaner 6 concerning this invention is explained in detail with reference to drawings. First, the air cleaner 6 is explained with reference to drawing 1.

[0009]The air cleaner by this invention defecates the air of the exterior inhaled from the inlet port 12 using water, and exhausts it from the exhaust port 23, and the function is roughly divided into inhalation of air, pure processing (purifying treatment), and exhaust air. Among these, pure processing of air is performed by the spray part which sprays a fluid on misty state, and the water used here is supplied from the water tank (storage tank) formed in the device (supply). In order to use this water tank as an object for feed water and also to operate it as a tank for recovery which collects used water (waste water), it is constituted from this example by this air cleaner so that the recovery mode which collects waste water other than the normal mode which supplies water can be taken.

[0010]Drawing 1 shows the entire configuration figure of the air cleaner 6 concerning this invention, drawing 2 shows the left part enlarged drawing of the air cleaner 6, and drawing 3 is a right-part enlarged drawing, and shows the state where the water tank 15 was stored in the stowage 8 (set).

[0011]As shown in drawing 1, the stowage 8 for the exhaust duct 9 with an inside cylindrical on the left-hand side of the device main frame 7 to be arranged, and for the air cleaner 6 store [ the whole is made with approximately box-like, ] the water tank 15 on the right-hand side, enabling free attachment and detachment is allotted.

[0012]As shown in drawing 1, the exhaust duct 9 makes the shape of a cochlea mostly, the inside duct acts as the air intake duct 10, and an outer duct acts as the exhaust duct 9. therefore, the exhaust duct 9 -- mostly, a center serves as the abbreviated L character-like air intake duct 10, and the cylindrical spray part 11 is installed in the tubed part 27 of this air intake duct 10. The opening of the inlet port 12 of the air intake duct 10 is carried out to the end side (a figure left-hand side) of the main part 7, and the lower end opening part of the air intake duct 10 is sealed by the end plate 16 which has two or more openings. Therefore, as shown in drawing 2, the periphery side of the end plate 16 has two or more vents (opening) 17 and 17 over a circumferencial direction. These vents 17 and 17 are for passing the air defecated by the spray part 11.

[0013]It is [ the casing 19 ] united, it is formed above the Kamiita part 18 of the exhaust duct 9, and the opening of the end (a figure left-hand side) of this casing 19 is carried out outside as the exhaust port 23. The vent 26 for sending in air in the casing 19 is formed in the Kamiita part 18, and the sirocco fan 25 driven by the motor 24 so that this vent 26 may be plugged up is arranged. The air defecated when the sirocco fan 25 rotated is exhausted from the exhaust port 23 through the vent 26.

[0014]On the other hand, as the stowage 8 is shown in drawing 3, it is a case for insertion and detachment of the water tank 15, the whole is mostly constituted by the cube type (rectangular parallelepiped shape), and the rising wood of the stowage 8 is supported by the section extending 19a which extended from the inner direction flange 7a of the main part 7, and the edge part of the casing 19. The lower half part of the stowage 8 is selected so that it may be mostly in agreement with the width of the water tank 15, and the Johan part is formed somewhat broadly so that it may be easy to store the water tank 15. The tank storage port (upper opening) of the stowage 15 is opened and closed with the storage lid 21 (covering device) constituted focusing on the pivot 20 enabling free opening and closing.

[0015]The mounting cylinder part 22 of the convex pars basilaris ossis occipitalis 67 of the stowage 8 projected towards the inside (a figure on) as mostly shown also in drawing 1 in the center is formed, and the water tank 15 is set here. The mounting cylinder part 22 is a conducting port of the water tank 15, and the chamber tank 69 is inserted in the lower part. The chamber tank 69 is connected with the 1st branch pipe 40 mentioned later.

[0016]As shown in drawing 2 and drawing 3, the end plate 28 is attached to the stowage 8 bottom so that main part 7 inside may be crossed, the room by the side of the main body bottom part divided by this end plate 28 is covered, and mounting and fixing of the part 29 is carried out. The water used by pure processing of the water and the spray part 11 which collect and are supplied to the part 29 from the water tank 15 is stored. It collects, the part 29 comprises this example as a double tube-like object, and fit fixing of the lower end part of the exhaust duct 9 is carried out by the small diameter support cylinder part 30 provided inside.

[0017]As shown in drawing 3, it collects, and a part of pars basilaris ossis occipitalis of the part 29 is made with the concave part 33, and the centrifugal pump 31 for returning water used as a pumping means in the pump case 50 provided here is arranged.

[0018]Mounting and fixing of the pumping motor 48 made to rotate the centrifugal pump 31 is carried out to the upper part of the end plate 28. It pumps up with the centrifugal pump 31, and the motor 48 separates comparatively, is taken, and is that of \*\*\*\*\*, and both are connected with the axis of rotation 49 in this example. The suction hole 51 is established in the circumference of the axis of rotation for the centrifugal pumps 31, and it is open for free passage with two or more drain holes 52 formed in the peripheral flank of the centrifugal pump 31. Eccentric prevention of the centrifugal pump 31 etc. are achieved with the axis of rotation 49.

[0019]The water which collected and was stored in the part 29 is pumped up with the centrifugal pump 31, is shunted toward the 1st and 2 branch pipes 40 and 41 through the charge and discharge pipe 53 of the shape of an L character shown in drawing 3, and is sent into the spray part 11 or water tank 15 side. For this reason, the channel selector 32 is formed between the 1st branch pipe 40 and the 2nd branch pipe 41 which were mutually isolated as shown in drawing 4. Since this channel selector 32 functions as opening and closing the channel of the 1st and 2 branch pipes 40 and 41 complementarily, it can switch the watering direction of the water to which water is returned from the charge and discharge pipe 53. The upper pipes 44 and 45 of the approximately J type which constitutes the cylindrical cylinder pipes 42 and 42 are connected with the 1st and 2 branch pipes 40 and 41, and the lower pipes 46 and 47 of the cylinder pipe 42 are further connected with some charge and discharge pipes 53.

[0020]The 1st and 2nd opening and closing valve 38 and 39 provided in the channel selector 32 is opened and closed by the plunger 13. The piston 36 is fitted in the bobbin 37 which constitutes the plunger 13 toward shaft orientations, enabling a free attitude, and the 1st and 2nd opening and closing valve 38 and 39 by which India rubber etc. were used for the triangular pyramid shape tip parts 36a and 36b provided in the both sides of the piston 36 is attached. The bobbin 37 by the side of the 2nd opening and closing valve 39 is supported by the cylinder pipe 42 via an accessory plate, and the concave ring groove 68 formed in right-hand side slippage of the piston 36 is equipped with the support plate 14, and the compression spring 84 intervenes between this support plate 14 and side plate 171. As for the piston 36, the 1st opening and closing valve 38 is welded by pressure to the opening 23 of the 1st branch pipe 40 according to the elastic force of this compression spring 84 by this. As a result, the channel of the water which opens the charge and discharge pipe 53 and the chamber tank 69 for free passage is intercepted, and, as for this, the 2nd opening and closing valve 39 is opened on the contrary.

[0021]As shown in drawing 3, a water-works system is constituted so that the lower end part of the charge and discharge pipe 53 may be open for free passage with the drain hole 52 by being attached using the conduit tube 56. The crank form water pipe 57 is inserted in the upper pipe 45 of the 2nd branch pipe 41, and the other end is



inserted in the mounting mouth 59 of the jet nozzle 58 provided in order to supply water to the spray part 11 shown in drawing 2. The spray part 11 shown in drawing 2 has the tubed frame part 60. The frame part 60 is the basket type composition where the superior lamella 62 and the inferior lamella 63 were allotted to the upper and lower sides of the sponge 61, and the vertical board 64 was formed at equal intervals between these superior lamellas 62 and the inferior lamella 63. The thick cylinder-like sponge 61 is held as a defecation member in the frame part 60 of the shape of this lattice. After [ of the inferior lamella 63 ] penetrating the center mostly, allotting the Johan part of the jet nozzle 58 and the flange 58a of the jet nozzle 58 having contacted the undersurface of the end plate 16, mounting and fixing is carried out to the cylindrical space formed inside the sponge 61. In the Johan part of the jet nozzle 58, two or more jet holes 75 and 75 for spouting water are punched along with the longitudinal direction of this nozzle, and the water to which water was returned from the water pipe 57 blows off almost uniformly from these jet holes 75. The motor 71 is attached to the support plate 72 of the air intake duct 10 mostly formed in the center, and the spray part 11 rotates by this motor 71. Two or more vents 73 and 73 for passing the air inhaled from the inlet port 12 are formed in the plate surface of the support plate 72.

[0022]The sprayed water adheres to the internal surface of the air intake duct 10, serves as waterdrop, and collects on the bottom plate part 120 of the exhaust duct 9. the bottom plate part 120 -- the opening 76 is mostly formed in the center and the bottom plate part 120 inclines gently toward this opening 76. The storage cylinder 77 is really formed in the lower part of the opening 76 in the state where it projected caudad temporarily [ cylindrical ], and the drain valve 78 is formed in the inside of the storage cylinder 77. For this reason, waterdrop flows through an inclined plane and is temporarily stored in the storage cylinder 77.

[0023]The drain valve 78 comprises umbrella-like the valve body 79 (valve element) and the supporting spindle 80, as shown in drawing 2, and mounting and fixing of the inside of this valve 79 is carried out to the supporting spindle 80 via the stop ring 163. Elastic materials, such as rubber, are used for the valve 79. As shown in the figure, only the specified quantity is stored here, since the drain valve 78 is always a valve closing condition, if the mist-like water used as waterdrop becomes more than a constant rate, the valve 79 will open it with the prudence, it collects [ lower ] and water comes to fall to the part 29.

[0024]Now, the water tank 15 is constituted from the attachment (screwing) \*\*\*\* feed water cap 87 and the water-works cap 70 by the tank body 86 mostly fabricated by the cube type (rectangular parallelepiped) with the rigid plastic etc., and the up-and-down mounting mouth 126,127, respectively, as shown in drawing 5. The inflow part 130 for [ of the feed water cap 87 ] making air flow in the center mostly is formed. In this example, the purge valve 88 is formed in this inflow part 130, and the feed water at the time of feed water is promoted by this purge valve 88 (at the time of valve opening of a purge valve), and full-of-water detection which operates when collecting waste water at the time of the recovery mode mentioned later is performed. The discharge section 131 for [ of the water-works cap 70 ] pouring the water in the water tank 15 in the center mostly is formed.

[0025]the purge valve 88 has the umbrella-like valve body 89 (valve element) in which India rubber etc. were used -- the valve 89 -- the sleeve 90 -- mounting and fixing is mostly carried out to a center section, and fit fixing of the tip part of the sleeve 90 is carried out to the hollow cylinder part 111 of the float 91. By a diagram, the valve 89 is located in the concave 92 of the hollow cylinder part 111. The 1st compression spring 95 that acts in the direction which closes a valve between the flange 93 provided in the leader of the sleeve 90, and the inner direction flange 94 of the feed water cap 87

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## DESCRIPTION OF DRAWINGS

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### [Brief Description of the Drawings]

[Drawing 1]It is an embodiment of the air cleaner concerning this invention.

[Drawing 2]It is a left part expanded sectional view of drawing 1.

[Drawing 3]It is a right-part expanded sectional view of drawing 1.

[Drawing 4]It is an important section expanded sectional view of drawing 3.

[Drawing 5]It is a sectional view showing a water tank.

[Drawing 6]It is the same figure as drawing 3 showing the operation at the time of the set of a water tank.

[Drawing 7]It is an important section expanded sectional view of drawing 6.

[Drawing 8]It is the same figure as drawing 6 showing the operation at the time of the power supply ON.

[Drawing 9]It is an important section expanded sectional view of drawing 8.

[Drawing 10]It is a sectional view showing the normal operation of an air cleaner.

[Drawing 11]It is an important section expanded sectional view in which A shows the valve closing condition of a drain valve, and B shows the open state of a drain valve.

[Drawing 12]It is a figure showing the waste water collecting operation of an air cleaner.

[Drawing 13]It is an important section expanded sectional view of drawing 12.

[Drawing 14]It is an important section expanded sectional view showing the operation at the time of the fall of an air cleaner.

[Drawing 15]It is an embodiment of the negative ion generator concerning this invention.

### [Description of Notations]

1 Recovery tank

6 Air cleaner

8 Stowage

9 Exhaust duct

10 Air intake duct

11 Spray part

15 Water tank

29 Collect and it is a part.

31 Centrifugal pump

32 Channel selector

53 Charge and discharge pipe

57 Water pipe

58 Jet nozzle

78 Drain valve

88 Purge valve

100 Water-works valve

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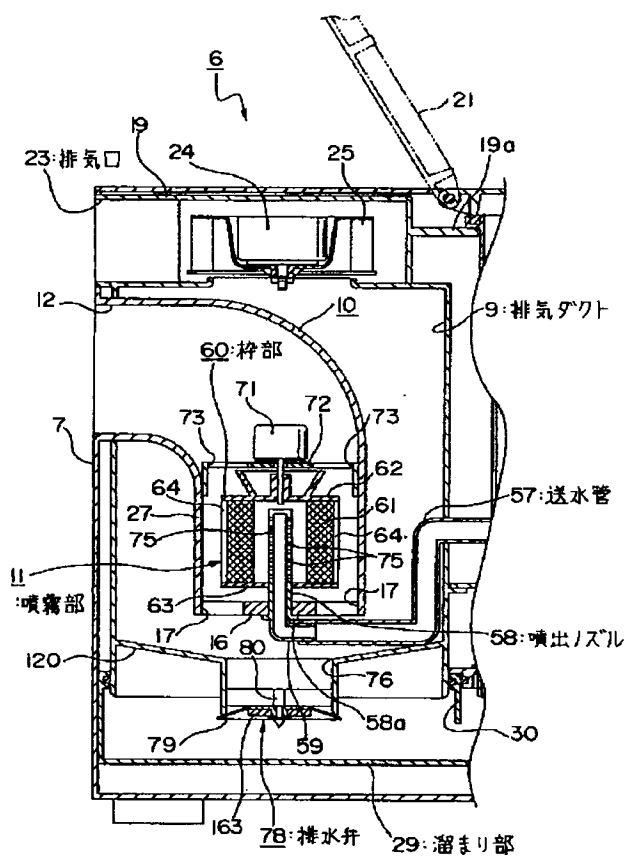
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[Drawing 1]

Figure 1 is a cross-sectional view of a cleaning device. The device consists of a main body (7) with a storage section (8) and a cleaning section (22). A water supply tank (15) is connected to the cleaning section. A spray nozzle (58) is connected to a water supply pipe (57) and a drain pipe (78). A storage container (77) is also shown. Various components are labeled with numbers: 12 (inlet), 23 (outlet), 19 (ring), 19a (ring), 21 (cover), 9 (outlet), 10 (inlet), 11 (spray section), 25, 26, 27, 48, 67 (convex bottom), 7a, 8, 22, 66, 67, 77, 78, 79, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.

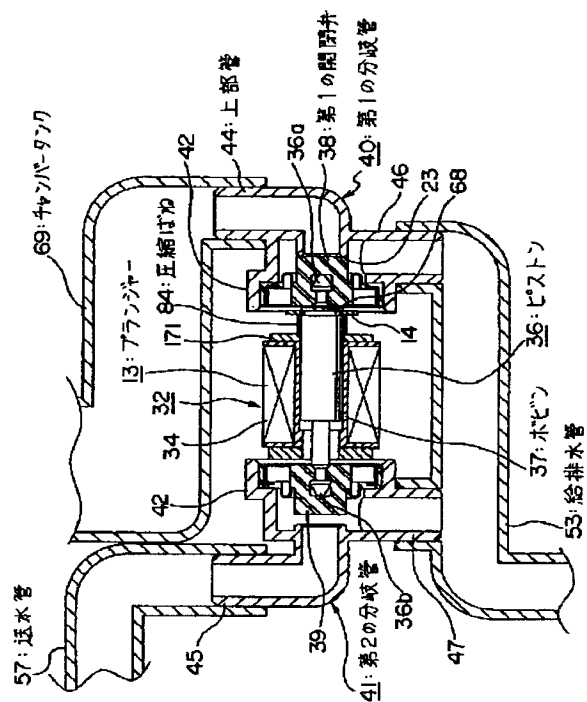
[Drawing 2]

図1の左部拡大図



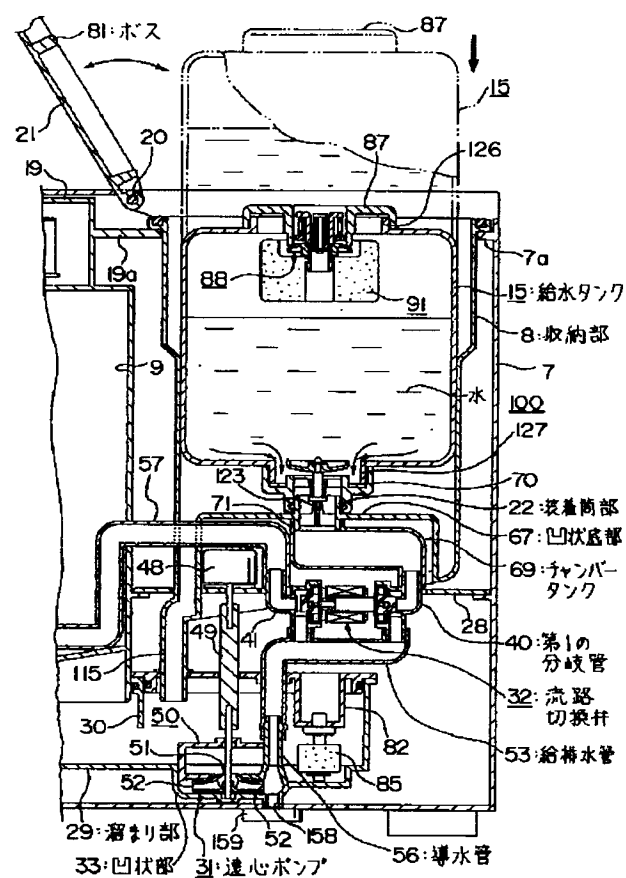
[Drawing 4]

流路切換弁32の構成



[Drawing 3]

給水タンク15の収納状態





## 【特許請求の範囲】

【請求項1】 複数の実行形式のプログラムを同時に選択して実行させることが可能なコンピュータ装置における各プログラムの実行管理方法であって、

プログラムの同時実行を制限すべき他のプログラムの識別情報とその制限条件とを個々のプログラム毎に予め設定しておき、選択された一つのプログラムの実行中は当該プログラムの実行が終了するまで前記設定された他のプログラムの起動を前記制限条件に従って制限することを特徴とするプログラムの実行管理方法。

【請求項2】 複数の実行形式のプログラムを同時に選択して実行させることが可能なコンピュータ装置における各プログラムの実行管理方法であって、所定のメニュー・インタフェース手段によって表示される複数のメニュー項目のそれぞれに、前記プログラムの起動環境情報と同時実行を制限すべき他のプログラムの識別情報及びその制限条件とを対応付けておき、一つのプログラムが前記メニュー項目を通じて起動されたときに、前記制限条件に応じて前記メニュー項目の表示形態を前記他のプログラムの選択が制限されるように変化させることを特徴とするプログラムの実行管理方法。

【請求項3】 複数の実行形式のプログラムを同時に選択して実行させることが可能なコンピュータ装置において使用される装置であって、

選択可能な前記プログラムの一覧をプログラム毎に割り当てられたメニュー項目を通じて表示するメニュー・インタフェース手段と、

前記表示されたメニュー項目毎に当該プログラムの起動環境情報と同時実行を制限すべき他のプログラムの識別情報及びその制限条件とを対応付ける手段と、

前記表示されたメニュー項目を通じて一つのプログラムが起動されたときに、そのメニュー項目に対応付けられた前記制限条件に基づいて他のプログラムの起動を制限させる起動制御手段と、

前記実行中のプログラムの実行過程を監視するとともに当該プログラムの実行終了を契機に前記実行制限を解除する手段と、

を備えて成るプログラム実行管理装置。

【請求項4】 前記起動制御手段は、選択されたメニュー項目に対応付けられた前記制限条件に非表示要求が設定されている場合、該当プログラムの実行中は前記一覧及びメニュー項目の表示を制限させることを特徴とする請求項3記載のプログラム管理装置。

【請求項5】 前記起動制御手段は、選択されたメニュー項目に対応付けられた前記実行制限条件に他のメニュー項目のマスク要求が設定されている場合、該当プログラムの実行中は前記設定された他のプログラムについてのメニュー項目を選択不能にさせることを特徴とする請求項3記載のプログラム管理装置。

【請求項6】 複数の実行形式のプログラムを同時に選

択して実行させることが可能なコンピュータ装置に前記プログラムの実行管理を行わせるための命令群を前記コンピュータ装置が読取可能な形態で記録した記録媒体であって、

前記命令群が、

前記選択可能なプログラムの一覧をプログラム毎に割り当てられたメニュー項目を通じて表示させる処理、

前記表示されたメニュー項目毎に当該プログラムの起動環境情報と同時実行を制限すべき他のプログラムの識別

10 情報及びその制限条件とを対応付ける処理、

前記表示されたメニュー項目を通じて一つのプログラムが起動されたときに、そのメニュー項目に対応付けられた前記制限条件に基づいて他のプログラムの起動を制限させる処理、及び、

前記実行中のプログラムの実行過程を監視するとともに当該プログラムの実行終了を契機に前記実行制限を解除する処理を、前記コンピュータ装置に行わせるものであることを特徴とする記録媒体。

## 【発明の詳細な説明】

20 【0001】

【発明の属する技術分野】本発明は、コンピュータ装置で使用される複数のプログラムの実行管理を、例えばメニュー・インタフェースを使用して効率良く行う手法に関する。

## 【0002】

【従来の技術】利用者に対して実行形式のプログラム、例えばアプリケーションプログラム（以下、AP）やユーティリティプログラム（以下、AP等という場合もある）を簡単な操作で起動させるためのユーザ・フレンドリなインタフェースを提供する方式として、GUI（Graphical User Interface）によるメニュー・プログラム（ランチャー・アプリケーションとも呼ばれる）が知られている。また、パーソナル・コンピュータ装置で使用されるメニュー・プログラムとして著名なものでは、Microsoft社の「Windows 3.1」、あるいは「Windows NT」の「ファイルマネージャ」や「プログラムマネージャ」、「Windows 95」の「スタートメニュー」や「エクスプローラ」、Symantec社の「Norton Utility」等がある。

30 【0003】上記のOS（オペレーティングシステム）はマルチタスク型のOSであるが、OSがマルチタスクであるということは、当該OS上で複数のAP等を同時に実行可能であることを意味する。具体的には、あるAP「A」が起動しているときに、表示メニューから別のAP「B」を選択すれば、AP「B」も同時期に起動可能となる。このように、マルチタスク型のOSで使用されるメニュー・プログラムのもとでは、表示メニューを通じて複数のプログラムの起動が容易に行えるようになっている。

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## 【0004】

【発明が解決しようとする課題】しかし、上述のようにして表示メニューを通じてA P等を実行させる従来の方式では、複数のA P等を同時に起動させると、個々のプログラムの動作が不良ないし不安定になったり、処理速度が低下してしまうことがよくある。例えば、電子メールの送受信用A Pとデスクトップ会議システム用A Pとを同じパーソナル・コンピュータ装置上で起動させると、例えば通信用デバイスドライバの競合や、お互いの通信電文を破壊する等の不具合が発生する場合がある。また、ビデオ・オン・デマンドシステムに接続して動画の配信を受けて再生を行っているパーソナル・コンピュータ装置上で、さらにもう1つのA Pを起動させると、動画の再生が停止したり、途切れたりする等の不具合が生じる場合もある。これらの不具合は、コンピュータ装置やソフトウェア等に関する知識を有する利用者であれば、それを意識して注意することはできるが、上記知識を持たない利用者にとっては、不具合のみが顕となり、快適な使用ができなくなる問題があった。

【0005】そこで、本発明の課題は、マルチタスク型OS上で動作する複数の実行形式のプログラムの競合等に伴う動作不安定を抑制することができる、改良されたプログラム実行管理方法を提供することにある。本発明の他の課題は、コンピュータ装置やソフトウェア等の専門知識を必要としない、エンドユーザ指向のシステム構築を可能にするプログラム管理装置、及びこのプログラム管理装置を汎用コンピュータ装置上で実現するための記録媒体を提供することにある。

## 【0006】

【課題を解決するための手段】本発明が提供するプログラム実行管理方法は、複数の実行形式のプログラムを同時に選択して実行させることが可能なコンピュータ装置における各プログラムの実行管理方法であって、プログラムの同時実行を制限すべき他のプログラムの識別情報とその制限条件とを個々のプログラム毎に予め設定しておき、選択された一つのプログラムの実行中は当該プログラムの実行が終了するまで前記設定された他のプログラムの起動を前記制限条件に従って制限することを特徴とする。

【0007】本発明が提供する他のプログラム実行管理方法は、複数の実行形式のプログラムを同時に選択して実行させることが可能なコンピュータ装置における各プログラムの実行管理方法であって、所定のメニュー・インタフェース手段によって表示される複数のメニュー項目のそれぞれに、前記プログラムの起動環境情報と同時実行を制限すべき他のプログラムの識別情報及びその制限条件とを対応付けておき、一つのプログラムが前記メニュー項目を通じて起動されたときに、前記制限条件に応じて前記他のプログラムの選択が制限されるように前記メニュー項目の表示形態を変化させることを特徴とす

る。

【0008】また、他の課題を解決する本発明のプログラム実行管理装置は、複数の実行形式のプログラムを同時に選択して実行させることが可能なコンピュータ装置において使用される装置であって、複数の実行形式のプログラムを同時に選択して実行させることが可能なコンピュータ装置において使用される装置であって、選択可能な前記プログラムの一覧をプログラム毎に割り当てられたメニュー項目を通じて表示するメニュー・インタフェース手段と、前記表示されたメニュー項目毎に当該プログラムの起動環境情報と同時実行を制限すべき他のプログラムの識別情報及びその制限条件とを対応付ける手段と、前記表示されたメニュー項目を通じて一つのプログラムが起動されたときに、そのメニュー項目に対応付けられた前記制限条件に基づいて他のプログラムの起動を制限させる起動制御手段と、前記実行中のプログラムの実行過程を監視するとともに当該プログラムの実行終了を契機に前記実行制限を解除する手段と、を備えて成る。

【0009】前記起動制御手段は、選択されたメニュー項目に対応付けられた前記実行制限条件に非表示要求が設定されている場合、該当プログラムの実行中は前記一覧及びメニュー項目の表示を制限させ、一方、他のメニュー項目のマスク要求が設定されている場合、該当プログラムの実行中は前記設定された他のプログラムについてのメニュー項目を選択不能にさせるようにする。

【0010】また、他の課題を解決する本発明の記録媒体は、複数の実行形式のプログラムを同時に選択して実行させることが可能なコンピュータ装置に前記プログラムの実行管理を行わせるための命令群を前記コンピュータ装置が読取可能な形態で記録した記録媒体であって、前記命令群が、前記選択可能なプログラムの一覧をプログラム毎に割り当てられたメニュー項目を通じて表示させる処理、前記表示されたメニュー項目毎に当該プログラムの起動環境情報と同時実行を制限すべき他のプログラムの識別情報及びその制限条件とを対応付ける処理、前記表示されたメニュー項目を通じて一つのプログラムが起動されたときに、そのメニュー項目に対応付けられた前記制限条件に基づいて他のプログラムの起動を制限させる処理、及び、前記実行中のプログラムの実行過程を監視するとともに当該プログラムの実行終了を契機に前記実行制限を解除する処理を、前記コンピュータ装置に行わせるものであることを特徴とする。

## 【0011】

【発明の実施の形態】以下、本発明を複数のA Pの実行管理に適用した場合の実施の形態を図面を参照して詳細に説明する。図1は、本実施形態によるA P管理システムの構成例を示す機能ブロック図である。このA P管理システム1は、本発明のA P管理装置10、マウスあるいはキーボード等の入力装置20、及び、CRTや液晶



ディスプレイ等の出力装置30を含み、複数のAP(#1~#n)41~4nの実行を管理できるように構成される。なお、管理対象となる複数のAPは、それぞれ既存のAPである。

【0012】AP管理装置10は、コンピュータ装置が所定の命令群、すなわちコンピュータプログラム及び必要なパラメータを読み込んで実行することにより形成される、入力処理部11、表示処理部12、AP起動処理部13、AP監視処理部14、AP実行条件ファイル15、AP実行条件設定処理部16の各機能ブロックを具備して構成される。表示処理部12は出力装置30にメニュー項目を表示させるメニュー・インタフェース手段として機能するものであり、入力処理部11及びAP起動処理部12は、AP実行条件ファイル15の設定内容に基づいてAPの起動実行を制御する起動制御手段として機能するものである。なお、上記コンピュータプログラム等は、通常、コンピュータ装置に内蔵されるハードディスク等の記憶手段に格納されて使用されるが、コンピュータ装置とは分離した形態で流通する記録媒体、例えばCD-ROMやFD等に格納され、使用時に上記記憶手段にインストールされるものであってもよい。

【0013】各機能ブロック11~16の具体的な内容は下記のとおりである。入力処理部11は、出力装置30において表示されるメニューから利用者が入力装置20を通じて選択したメニュー項目に対応する情報の入力ないし転送処理等を行う。具体的には、利用者によりあるメニュー項目が選択されると、まず、選択されたメニュー項目に対応したAPの起動環境情報、すなわちそのAPの格納先である実行APパスをAP実行条件ファイル15より取得してAP起動処理部13に送る。また、利用者により選択されたメニュー項目に他のAPの制限条件、例えばメニューの非表示要求、あるいは他のメニュー項目のマスク要求が設定されている場合は、各々の制限条件に対応したコマンドを表示処理部12に送る。

【0014】表示処理部12は、出力装置30にメニューを表示させるとともに、入力処理部11からのコマンドに基づいて、メニューの非表示処理またはメニュー項目のマスク処理を行う。メニューの非表示処理とは、コマンドが非表示要求の場合にメニュー自体を表示させなくする処理であり、項目のマスク処理とは、コマンドがマスク要求のときに、メニューは表示するが、該当するメニュー項目の選択をできなくする処理である。

【0015】AP起動処理部13は、入力処理部11より送られた実行APパスに基づいて複数のAPから特定のAPを選択して起動実行させるとともに、当該実行APパスを含んだAP監視コマンドを作成し、これをAP監視処理部14に送る。AP監視処理部14は、上記コンピュータ装置のタイマ等を使用して、AP起動処理部13より入力されたAP監視コマンドに基づいて起動しているAP(#1~#n)41~4nの実行状況の監視

処理を定期的に行う。また、監視中のAPの実行が終了した場合、監視処理を終了するとともに、入力処理部11に対してAPの実行終了を通知する。上記タイマ等による監視は、例えば、使用するコンピュータ装置のOSに基づいたコールバック関数等を用いて当該OSに登録し、APの実行終了後にOSからAP監視処理部14に通知するように構成する。AP実行条件設定処理部16は、AP実行条件ファイル15の作成、内容設定、その更新を行う。このAP実行条件ファイル15の作成及び内容設定は、通常、システム構築時にシステム管理者等によって行われるが、事後的、例えばシステム運用中においても可能である。

【0016】AP実行条件ファイル15は、複数のAPのメニュー項目による選択と他のAPの同時実行の制限とを可能にする属性情報を設定するためのものである。このAP実行条件ファイル15の設定項目例を図4

(a)、具体的な設定情報例を図4(b)に示す。

【0017】図4(a)において、「項目番号」はメニュー項目の識別情報の設定領域、「項目表示名称」は項目番号に対応付けられ、実行可能なAPを識別するための文字列設定領域、「実行APパス」は実行対象となるAPの格納先を示すパスの設定領域、「メニュー非表示要求」は該当APの実行中にメニューの表示を行わないようにするための他のAPの識別情報の設定領域、「マスク項目番号」は、当該項目番号が選択され該当APの実行中にメニュー中でマスクしたい1つまたは複数のAP、具体的にはそれに対応する項目番号の設定領域である。この実施形態では、「メニュー非表示要求」に

‘0’が設定されていればメニュー表示を行ない、逆に‘1’が設定されていればメニュー表示を行わないようにする。また、「マスク項目番号」には、該当APの実行中に表示メニュー中でマスクしたい1つまたは複数の項目番号を設定するものとする。

【0018】図4(b)は、6つのAP、すなわち‘電子新聞’、‘電子図書館’、‘電子雑誌’、‘電子メール’、‘テレビ会議システム’、‘電子決済’を設定した場合の例を示している。各メニュー項目のうち、項目番号“6”の‘電子決済’では、メニュー非表示要求が‘1’に設定されているため、このAPの起動実行中は、メニュー自体が表示されなくなる。また、項目番号“3”の‘電子雑誌’では、マスクしたい項目番号に、“1”の‘電子新聞’、“4”の‘電子メール’、“5”の‘テレビ会議システム’、が設定されているので、‘電子雑誌’が選択されて実行している間は、項目番号“1”、“4”、“5”のAPについてはメニューには表示されるもののその選択が不可能にされる。他のメニュー項目についても同様の見方をすることができ

る。

【0019】次に、本実施形態のAP管理装置10の動作内容を図2及び図3を参照して具体的に説明する。な

お、AP実行条件ファイル15は、AP実行条件設定処理部16で既に作成され、上述のような情報が設定されているものとする。

【0020】図2において、AP管理装置10が起動すると、表示処理部12はAP実行条件ファイル15を読み込み（ステップS101）、出力装置30へのメニュー表示を行う（ステップS102）。表示されるのは、選択可能なAPの一覧情報である。利用者は、入力装置20を用いてメニューから所望のAPが設定されたメニュー項目を選択する（ステップS103）。選択されたメニュー項目についての情報は、入力処理部11に送られる。入力処理部11は、AP実行条件ファイル15の設定内容を読み込み、選択されたメニュー項目の対応APについて非表示要求が設定されているかどうかを判定する。設定されている場合は（ステップS104、Yes）、非表示コマンドを表示処理部12に対して発行する（ステップS105）。この非表示コマンドを受領した表示処理部12はメニューを全体を非表示とする（ステップS106）。入力処理部11は、また、選択された項目から、AP実行条件ファイル15から該当する実行APパスを取得し（ステップS107）、これをAP起動処理部13に送る。AP起動処理部13は、入力された実行APパスに該当するAPを読み出してそれを起動実行させる（ステップS108）。同時に、実行APパスを含んだAP監視コマンドをAP監視処理部14に送る。AP監視処理部14は、起動しているAPの実行状態の監視を開始し（ステップS109）、APの実行が終了したときは（ステップS110、Yes）、APの実行状態の監視を終了するとともに（ステップS111）、入力処理部11にAP終了の通知を行う（ステップS112）。このAP終了の通知を受領した入力処理部11は、メニューの非表示要求の解除コマンドを表示処理部12に送る（ステップS113）。この通知を受領した表示処理部12は、非表示処理を直ちに解除し、メニューの再表示を行う。

【0021】なお、ステップS104で、入力処理部11で選択された項目にメニューの非表示要求が設定されていないと判定した場合は（ステップS104、No）、図3の処理に移行する。すなわち、該当APにマスク番号が設定されているかどうかをAP実行条件ファイル15から確認し、設定されている場合は（ステップS114、Yes）、1または複数の該当APについてのマスク要求のコマンドを表示処理部12に発行する（ステップS115）。入力処理部11は、また、選択された項目に対応する実行APパスをAP実行条件ファイル15から取得し（ステップS116）、AP起動処理部13にその実行APパスを送る。

【0022】AP起動処理部13では、入力された実行APパスに該当するAPを選択してそれを起動させる（ステップS117）。同時に、実行APパスを含んだ

AP監視コマンドをAP監視処理部14に通知する。AP監視処理部14は、タイマ等で、起動しているAPの実行状態の監視を開始し（ステップS118）、終了したAPがない場合は（ステップS119、No）、ステップS102に戻り、ステップS115で通知されたメニュー項目のマスク要求を反映させた表示処理を行わせる。AP監視処理部14において、終了したAPが検出された場合（ステップS119、Yes）、そのAPの実行状態の監視を終了し（ステップS120）、入力処理部11に対して該当AP終了の通知を行う（ステップS121）。そのAPにおいて項目のマスク要求がなされていない場合は（ステップS122、No）、ステップS102に戻り、メニューの再表示を行わせる。一方、そのAPで項目のマスク要求がなされていた場合（ステップS122、Yes）、入力処理部11は、マスク解除コマンドを表示処理部12に発行する（ステップS123）。このマスク解除コマンドを受領した表示処理部12は、直ちにメニュー項目を解除し、ユーザによるそのメニュー項目の選択を可能にさせる。

【0023】図5は、本実施形態のAP管理装置10の出力装置30の表示出力例を示す図である。この例では、図4（b）に例示したAP実行条件ファイル15の設定内容が表示処理部12で読み込まれて表示されたメニューの初期状態を示すものである。この場合、メニューには、各メニュー項目の対応ボタン41～46毎に、項目番号、項目表示名称、実行APパス、メニュー非表示要求、マスク項目番号が、それぞれ割り付けられており、ボタン41～46のいずれかを選択すると、該当するAP実行条件ファイル15内の設定情報が獲得され、それに対応するAPが起動するようになっている。メニュー項目毎に、メニュー非表示化やボタン41～46に対応するメニュー項目のマスク処理が設定されている場合には、その設定に基づいてメニューの表示形態が変化ようになる。

【0024】このように、本実施形態のAP管理装置10によれば、メニュー形式のインタフェースを使用して目的のAPを選択的に起動させることができ、また同時実行の際に動作不良ないし不安定になる他のAPがある場合にはメニュー全体の非表示または該当するメニュー項目のマスク処理が行われるので、AP実行環境の競合等の不具合に対する効果的な対処が可能になる。また、APの実行状態を常時監視し、実行終了を検知したときはメニューの非表示またはメニュー項目のマスク処理が自動的に解除されるので、利用者が複数のAPの実行状態等を意識する必要がなくなり、操作性に優れた環境を提供することが可能となる。

【0025】なお、本実施形態では、複数のAPの同時実行を制限する場合の例について説明したが、本発明は、この実施形態に限定されるものではなく、ユーティリティプログラム等、実行形式の他のプログラムにも同

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様に適用できるものである。また、本実施形態のようにメニュー・インタフェースを通じてプログラムを起動ないしその制限することは望ましいが、常にそのようにしなくともよく、コンピュータ装置の内部処理にてそれを実現するようにすることもできる。

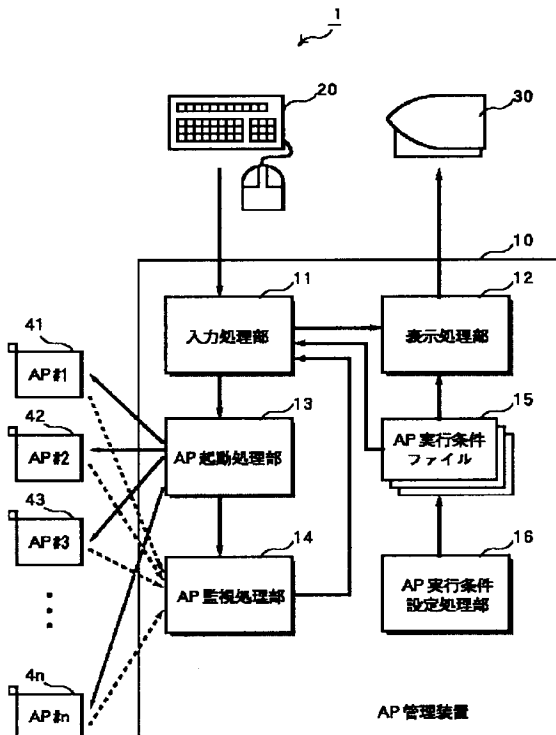
#### 【0026】

【発明の効果】以上の説明から明らかなように、本発明によれば、ある実行形式のプログラムの実行が許容されるときに制限条件に基づいて他のプログラムの起動が制限されるので、複数のプログラムの実行環境の競合等に伴う動作の不良ないし不安定や、処理速度の低下を抑えることが可能になる。また、利用者はメニュー形式のインタフェースを介して操作を行うだけで所望のプログラムをコンピュータ装置上で不具合なく実行させることができるので、コンピュータ装置やソフトウェア等の専門知識を必要としない、エンドユーザ指向のコンピュータシステムを容易に構築することが可能になる。

#### 【図面の簡単な説明】

【図1】本発明をアプリケーションプログラムの実行管\*

【図1】



\* 理に適用した場合のAP管理システムの構成例と、AP管理装置の機能ブロックを示した図。

【図2】AP管理装置における処理手順説明図。

【図3】AP管理装置における処理手順説明図。

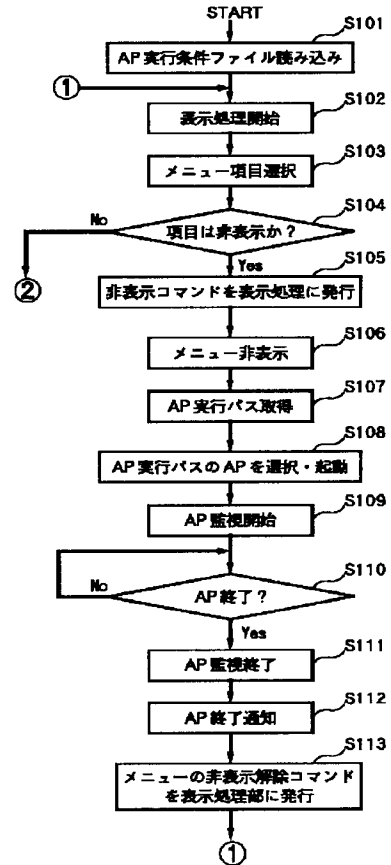
【図4】(a)はAP実行条件ファイルの設定項目例、(b)は具体的な設定内容例を示す説明図。

【図5】AP管理装置による表示出力例を示す説明図。

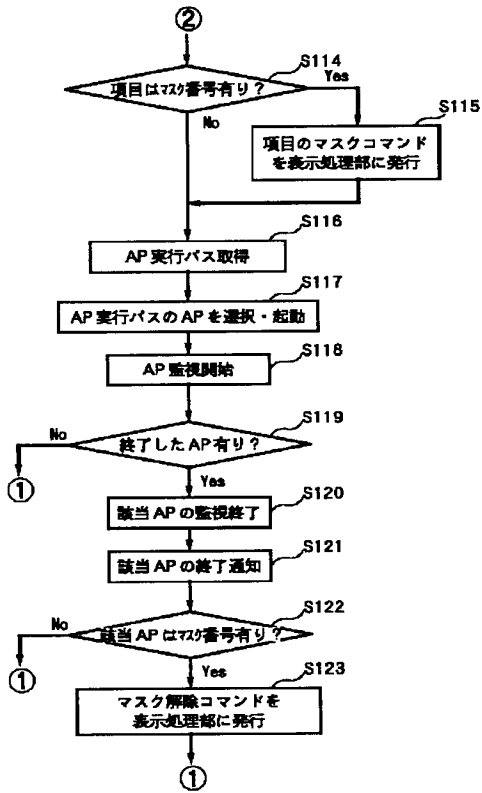
#### 【符号の説明】

- 1 AP管理システム
- 10 AP管理装置
- 20 入力装置
- 30 出力装置
- 11 入力処理部
- 12 表示処理部
- 13 AP起動処理部
- 14 AP監視処理部
- 15 AP実行条件ファイル
- 16 AP実行条件設定処理部

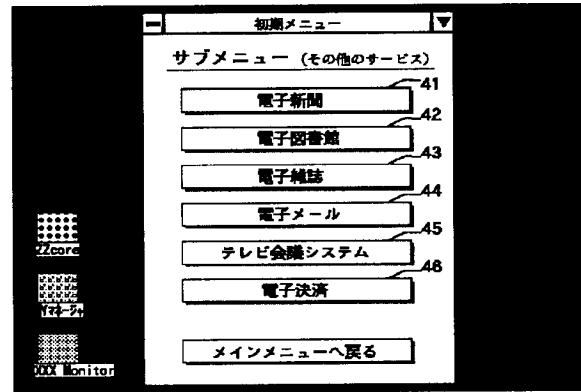
【図2】



【図3】



【図5】



【図4】

(a)

項目番号	項目表示名称	実行APパス	メニュー非表示要求 (=1)	マスク項目番号	...	マスク項目番号
項目番号	項目表示名称	実行APパス	メニュー非表示要求 (=1)	マスク項目番号	...	マスク項目番号
...	...	...	...	...	...	...
項目番号	項目表示名称	実行APパス	メニュー非表示要求 (=1)	マスク項目番号	...	マスク項目番号

(b)

1	電子新聞	c:\%c%news.exe	0	3	5			
2	電子図書館	c:\%s%libla.exe	0	4	5			
3	電子雑誌	c:\%sz%his%zzz.exe	0	1	4	5		
4	電子メール	c:\%term.exe	0	2	3	5		
5	テレビ会議システム	c:\%ddd%kaigi.exe	0	1	2	3	4	5
8	電子決済	c:\%m%bin%shop.exe	1					